

2003 ACCIDENT PREDICTION AND RESOURCE ALLOCATION PROCEDURE NORMALIZING CONSTANTS

The U.S. DOT Highway-Rail Crossing Resource Allocation Procedure, as described in the *Rail-Highway Crossing Resource Allocation Procedure User's Guide, Third Edition*, August 1987, DOT/FRA/OS-87/10, uses three "normalizing constants" in the accident prediction formula, Formula A, Section 3.2.4, Page 17. These constants need to be adjusted periodically in order to keep the procedure matched with the current accident trends. The last recalculation and adjustment was made for Calendar Year 1998 and published in the Appendix for the *Railroad Safety Statistics Annual Report* starting for year 1999.

Using the accident data for Calendar Years 1997 to 2001 (to predict 2002), the process of determining the three (3) new "normalizing constants" for 2003 is performed such that the sum of the 2002 accident prediction values of all currently open public at-grade crossings is made to equal the sum of the *observed* number of accidents that occurred for those same crossings. This process is performed for each of the respective three formulae for the three types of warning device categories, (1) passive, (2) flashing lights, and (3) gates. This process normalizes the calculated prediction for the current trend in accident data (downward) for each category and relative to each of the three types of warning device categories.

The *observed* accidents are those accident records that are in the data file. While mismatched data records caused by inaccurate accident/inventory reporting (e.g., where warning devices do not match) were included, those accidents which occurred prior to the date of a warning device change at those crossings which had a warning device category change during the period from 1997 to 2001 were excluded. This means that the number of *observed* accidents will not necessarily be equal to the actual number of accidents which are reported in the annual Bulletin.

These constants were redetermined for the "national" model using the crossings in the National Inventory File as of July 2003. Those using the "DOT Model" should update their models by replacing the old constants with the new recalculated values. These "normalizing constants" are located in the computer program ACPD.NEW as shown in the *User's Guide Third Edition* at the top of Page A-4, Appendix A1 and in RESAL.NEW on Page B-3, Appendix B1.

As of November 2003, these new constants will be in the 2003 PCAPS Computer Program and Internet version WBAPS on the FRA Website at <http://safetydata.fra.dot.gov/officeofsafety/>. The table below lists the new and prior constants.

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WARNING DEVICE GROUPS	NEW	PRIOR YEARS				
	2003	1998	1992	1990	1988	1986
(1) Passive	.6500	.7159	.8239	.9417	.8778	.8644
(2) Flashing Lights	.5001	.5292	.6935	.8345	.8013	.8887
(3) Gates	.5725	.4921	.6714	.8901	.8911	.8131

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